CLAIMS

We claim:

1. A method in a video decoding system for adapting to resource constraints, said method comprising steps of:

determining whether a resource constrained mode is to be initiated; and

responsive to determining that the resource constrained mode is to be initiated,

initiating the resource constrained mode, including foregoing decoding of portions of received video input.

2. The method of claim 1, wherein the determining step includes determining that the resource constrained mode is to be initiated responsive to inadequate memory availability.

3. The method of claim 1, wherein the determining step includes determining that the resource constrained mode is to be initiated responsive to inadequate bus bandwidth availability.

4. The method of claim 1, wherein the determining step includes determining that the resource constrained mode is to be initiated responsive to user interaction.

5. The method of claim 8, wherein the resource constrained mode is one of a plurality of resource constrained modes determined by the user interaction.

6. The method of claim 8, wherein the user interaction includes causing the video decoding system to reduce spatial resolution of video output.

7. The method of claim 8, wherein the user interaction includes causing graphics to be generated and output along with the video output.

8. The method of claim 1, wherein the determining step includes determining that the resource constrained mode should be initiated responsive to receiving from a video transmitter data describing the received video input.

9. The method of claim 1, wherein the received video input is encoded using a Motion Picture Experts Group (MPEG) encoding scheme.

10. The method of claim 9, wherein the initiating step includes foregoing decoding of at least one bi-directional frame (B frame).

11. The method of claim 9, wherein the initiating step includes foregoing decoding of at least one predictive frame (P frame).

12. The method of claim 9, wherein the initiating step includes foregoing decoding of a plurality of frames, and wherein the method further comprises repeating presentations of decoded frames to a user in place of the plurality of frames that are not decoded.

13. The method of claim 12, wherein the decoded frames that are repeated to a user include intra-coded frames (I frames).

14. The method of claim 12, wherein the decoded frames that are repeated to a user include predictive frames (P frames).

15. The method of claim 1, wherein the amount of received video input for which decoding is foregone varies based upon degree of resource constraint.

16. The method of claim 15, wherein the degree of resource constraint is determined in view of an amount of resource availability and an amount of additional resource needed.

17. The method of claim 16, wherein the resource constraint includes memory constraint.

18. The method of claim 16, wherein the resource constraint includes bus bandwidth constraint.

19. The method of claim 16, wherein the amount of additional resource needed is determined at least according to at least one look-up table.

20. The method of claim 16, wherein the amount of additional resource needed is determined at least according to a history of resource need.

21. The method of claim 16, wherein the type of received video input for which decoding is foregone is also based upon degree of resource constraint.

22. The method of claim 1, wherein the initiating step includes maintaining existing resource priorities controlling devices using the resources.

23. The method of claim 1, wherein the determining and initiating steps are performed in a digital home communication terminal including an interrupt driven central processing unit that is notified when a resource becomes constrained.

24. The method of claim 1, wherein the initiating step includes continuing to present audio to a user at a regular rate and maintaining audio and video synchronization during the resource constrained mode.

25. The method of claim 1, further comprising a step of terminating the resource constrained mode responsive to determining adequate resource availability.

26. A video decoding system for adapting to resource constraints, said system comprising:

determination logic configured to determine whether a resource constrained mode is to be initiated; and

initiation logic configured to initiate the resource constrained mode responsive to the determination logic, including foregoing decoding of portions of received video input.

27. The system of claim 26, wherein the determination logic is further configured to determine that the resource constrained mode is to be initiated responsive to inadequate memory availability.

28. The system of claim 26, wherein the determination logic is further configured to determine that the resource constrained mode is to be initiated responsive to inadequate bus bandwidth availability.

29. A video decoding method comprising the steps of:

determining that a video decoding rate should be reduced while maintaining synchronization with an unmodified audio decoding rate; and

reducing the video decoding rate accordingly.

30. The method of claim 29, wherein the determining step is responsive to a step of determining that at least one resource is constrained.

31. A video decoding method comprising the steps of:

determining whether a picture repetition mode should be initiated; and

initiating a mode of repeating pictures responsive to determining that the picture repetition mode should be initiated.

32. The method of claim 31, wherein the determining step is responsive to a step of determining that at least one resource is constrained.